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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/035,955

12/24/2001

M. Turhan Taner

RSI-003

3527

7590

09/10/2004

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EXAMINER

LE, TOAN M

ART UNIT

PAPER NUMBER

2863

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/035,955

Applicant(s)

TANER ET AL.

Examiner

Toan M Le

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION*****Response to Amendment***

The declaration under 37 CFR 1.132 filed 8/16/04 is insufficient to overcome the rejection of claims 1-12 based upon showing is not commensurate in scope with the claims as set forth in the last Office action because: the declaration shows exhibits A and B providing a method of calibration of self-organized map clusters, which refers only to the system described in the above referenced application and not to the individual claims of the application. As such the declaration does not show that the objective evidence of non-obviousness is commensurate in scope with the claims. For instance, the method of calibration of self-organized map (SOM) clusters using a Bayesian decision based on the knowledge of the probability density function of each class, e.g., Gaussian function, as the probability density estimator to generate a probability map for each lithology class.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-12 are rejected under 35 U.S.C. 102(a) as being anticipated by “Calibration of Seismic Attributes for Reservoir Characterization”, Pennington et al. (Referred hereafter Pennington et al.).

Referring to claims 1 and 10, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest and a device which is readable by a digital

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computer having instructions defining the following process and instructions to the computer to perform the process, comprising:

utilizing an unsupervised learning network to organize seismic data representing a subsurface region of interest (page 28, 1<sup>st</sup> paragraph);

correlating a portion of the organized seismic data with lithological data from a well bore located in the subsurface region of interest (page 28, 2<sup>nd</sup> paragraph; page 29, 1<sup>st</sup> paragraph; figures 18 and 21); and

applying the correlation to the seismic data to estimate lithology in the subsurface region of interest (page 30, 1<sup>st</sup> paragraph).

As to claim 2, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest wherein the unsupervised learning network is a self organizing feature map (page 28, 1<sup>st</sup> paragraph).

Referring to claim 3, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest wherein the unsupervised learning network is a Kohonen network (page 28, 1<sup>st</sup> paragraph).

As to claims 4 and 11, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest and a device which is readable by a digital computer having instructions defining the following process and instructions to the computer to perform the process, comprising:

applying a plurality of seismic data attributes for measurement location from a seismic data set from a subsurface region of interest to a Kohonen network to organize the seismic data set into a plurality of seismic Kohonen classes (page 28, 1<sup>st</sup> paragraph);

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selecting a subset of the organized seismic data set representative of the earth's subsurface in the vicinity of a well bore penetrating the subsurface region of interest (page 28, 2<sup>nd</sup> paragraph; page 29, 1<sup>st</sup> paragraph);

correlating Kohonen classes of the subset of the organized seismic data set with classes of lithological data from the well bore to generate a correlation between Kohonen classes and lithological classes (page 29, 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs); and

applying the correlated to the seismic data set to estimate lithology of the measurement locations (page 30, 2<sup>nd</sup> paragraph; page 31, last paragraph).

Referring to claim 5, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest wherein the seismic data attributes comprise semblance, amplitude-versus-offset and attenuation (page 27, 4<sup>th</sup> paragraph; page 34, 2<sup>nd</sup> paragraph, figure 25).

As to claim 6, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest wherein the lithological data comprise volume shale and acoustic impedance (page 23, 3<sup>rd</sup> paragraph).

Referring to claims 7 and 12, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest and a device which is readable by a digital computer having instructions defining the following process and instructions to the computer to perform the process, comprising:

applying a plurality of lithology values for measurement location from a well bore penetrating a subsurface region of interest to a Kohonen network to organize the lithology values into a plurality of lithology Kohonen classes (page 30, 2<sup>nd</sup> paragraph);

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utilizing the lithology Kohonen classes to establish ranges of a lithology value (page 30, 2<sup>nd</sup> paragraph, figure 22);

applying a plurality of seismic data attributes for measurement location from a seismic data set from the subsurface region of interest to a Kohonen network to organize the seismic data set into a plurality of seismic Kohonen classes (page 28, 1<sup>st</sup> paragraph);

selecting a subset of the organized seismic data set representative of the earth's subsurface in the vicinity of a well bore penetrating the subsurface region of interest (page 28, 2<sup>nd</sup> paragraph; page 29, 1<sup>st</sup> paragraph);

correlating Kohonen classes of the subset of the organized seismic data set with classes of lithological data from the well bore to generate a correlation between Kohonen classes and lithological classes, wherein the ranges of lithology value are utilize in establishing boundaries of the lithology classes (page 29, 2<sup>nd</sup> and 3<sup>rd</sup> paragraphs); and

applying the correlated to the seismic data set to estimate lithology of the measurement locations from the subsurface region of interest (page 30, 2<sup>nd</sup> paragraph; page 31, last paragraph).

As to claim 8, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest wherein the lithology values are volume shale and acoustic impedance (page 23, 3<sup>rd</sup> paragraph).

Referring to claim 9, Pennington et al. disclose a method of geophysical exploration of a subsurface region of interest wherein the seismic data attributes comprise semblance, amplitude-versus-offset and attenuation (page 27, 4<sup>th</sup> paragraph; page 34, 2<sup>nd</sup> paragraph, figure 25).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.**

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Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan M Le whose telephone number is (571) 272-2276. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on (571) 272-2269. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

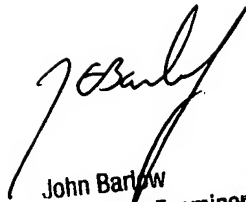
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Toan Le

August 31, 2004



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